WHAT IS CLAIMED IS:

1. A method for performing turbo decoding, comprising:

primarily decoding signals received from a transmission system and storing the primarily decoded signals in a specific address space of a memory;

interleaving the primarily decoded signals stored in the memory to change their order and secondarily decoding the interleaved signals; and

deinterleaving the secondarily decoded signals and storing the deinterleaved signals in the specific address space.

2. The method of claim 1, wherein the primary decoding and the secondary decoding are iterated n times using a Maximum A Posteriori (MAP) algorithm.

3. The method of claim 2, wherein the primary decoding is performed using a current transmission system signal of the transmission system signals and an $(n-1)^{th}$ iteration signal of the secondarily decoded signals.

4. The method of claim 1, wherein the secondary decoding is performed using the transmission system signals and the primarily decoded signals.

5. The method of claim 1, wherein the interleaving operation, the secondarily decoding, and the deinterleaving operation are implemented simultaneously.

6. A method for performing turbo decoding, comprising:

primarily decoding signals received from a transmission system and storing the primarily decoded signals in a specific address space of a memory;

interleaving the primarily decoded signals stored in the memory by an equation $E_i(k) = E(a(k))$, wherein $k = 1,2,\ldots,s$, s is a code block size, and E(k) is a MAP decoded signal;

secondarily decoding the interleaved signals in turn;

deinterleaving the secondarily decoded signals by an equation $E_d(a(k)) = E(k)$, wherein $k = 1,2,\ldots,s$, s is the code block size, and E(k) is the MAP decoded signal; and

storing the deinterleaved signals in a predetermined region of the memory indicated by a(k).

7. The method of claim 6, wherein the primary decoding and the secondary decoding are iterated n times using a Maximum A Posteriori (MAP) algorithm.

8. The method of claim 7, wherein the primary decoding is performed using a current transmission system signal of the transmission system signals and an $(n-1)^{th}$ iteration signal of the secondarily decoded signals.

9. The method of claim 6, wherein the secondary decoding is performed using the transmission system signals and the primarily decoded signals.

10. The method of claim 6, wherein the interleaving operation, the secondarily decoding, and the deinterleaving operation are implemented simultaneously.

11. A method for performing turbo decoding, comprising:

primarily decoding composite signals comprising systematic symbols x_k, $(n-1)^{th}$ iteration extrinsic information, and parity symbols y_k;

storing the primarily decoded composite signals in a specific address space of a memory;

interleaving the signals stored in the memory and secondarily decoding a second composite of the parity symbols y_k and the interleaved signals to generate n^{th} iteration extrinsic information; and

deinterleaving the secondarily decoded signals and storing the deinterleaved signals in the specific address space.

12. The method of claim 11, wherein the primary decoding and the secondary decoding are iterated n times using a Maximum A Posteriori (MAP) algorithm.

13. The method of claim 12, wherein the primary decoding is performed using a current transmission system signal of the transmission system signals and an $(n-1)^{th}$ iteration signal of the secondarily decoded signals.

14. The method of claim 11, wherein the secondary decoding is performed using the transmission system signals and the primarily decoded signals.

15. The method of claim 11, wherein the interleaving operation, the secondarily decoding, and the deinterleaving operation are implemented simultaneously.